



## WHAT ABOUT YOUR ROOFS?



A discussion of two of your  
most important problems:

**ROOF CONSTRUCTION and MAINTENANCE**





## Get the most for your roofing dollar!

*60 years of roofing experience enable Johns-Manville to offer you authoritative information on the important problems of roof construction and maintenance.*

**T**HE type of roof selected for your new building will determine whether or not you will have to budget for maintenance in years to come; and the proper treatment of your present roofs can eliminate upkeep expense which otherwise would become a serious burden.

To help you get the most for your roofing dollar, Johns-Manville has prepared this brochure, containing a brief discussion of every important part of the roof, from deck to flashing. If you desire more detailed information about your particular problems, Johns-Manville Roofing Engineers will be glad to consult with you at your convenience.

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*\*One visit to the Roof . . . and they cut next year's overhead \$24,000.*



The J-M Cap Sheet repair job is put on right over the old roof. No delays.

## Find out about your Roofs *now*—

A Johns-Manville Roof Inspection will cost you NOTHING . . . *but it may save you money*

DO you know the condition of your roofs right now? Will they continue to stand up under severe weather? Against fire hazards? Is the understructure in good condition? How about the flashings? Why not find out now, by taking advantage of Johns-Manville's free Roof Inspection Service?

Many prominent manufacturers have taken advantage of this service. One of them actually saved \$24,000.00. A J-M Inspection of his roof showed that, if needed repairs were not made promptly, a new roof would be

necessary in less than a year. On the recommendation made in the J-M Roof Inspection Report, he chose to spend approximately \$6,300. immediately for a J-M Cap Sheet repair job which added years to the life of his old roof. A new roof would have cost approximately \$30,000.00. Here was a \$24,000.00 cut in next year's overhead—all the result of one visit to the roof!

### Let J-M Roof Experts check your Roofs

Johns-Manville Roof Inspectors have been carefully trained. They recognize immediately the places where the roof is beginning to fail. They can show you where any trouble may be starting, or where a small repair job *now* may save you thousands of dollars later on. You are, of course, free to act on their report as you wish.

#### \*J-M ROOF INSPECTION REPORT

(Actual figures taken from one of many typical cases involving prominent manufacturers)

1933	1934 or 1935
Recondition present roof.....\$6,300.	Or apply new roof.....\$30,000.



# When you buy a roof— buy PERMANENCE

## Johns-Manville Bonded Asbestos Roofs are not only *permanent*—but FIREPROOF

THE roof, from a protection standpoint, is the vital part of any structure. More than any other part of the building, it is exposed to the ravages of time, fire and the elements. To stand up under all conditions, and give complete, trouble-free protection for the life of the building, the roof should be made of permanent, fireproof materials, properly applied.

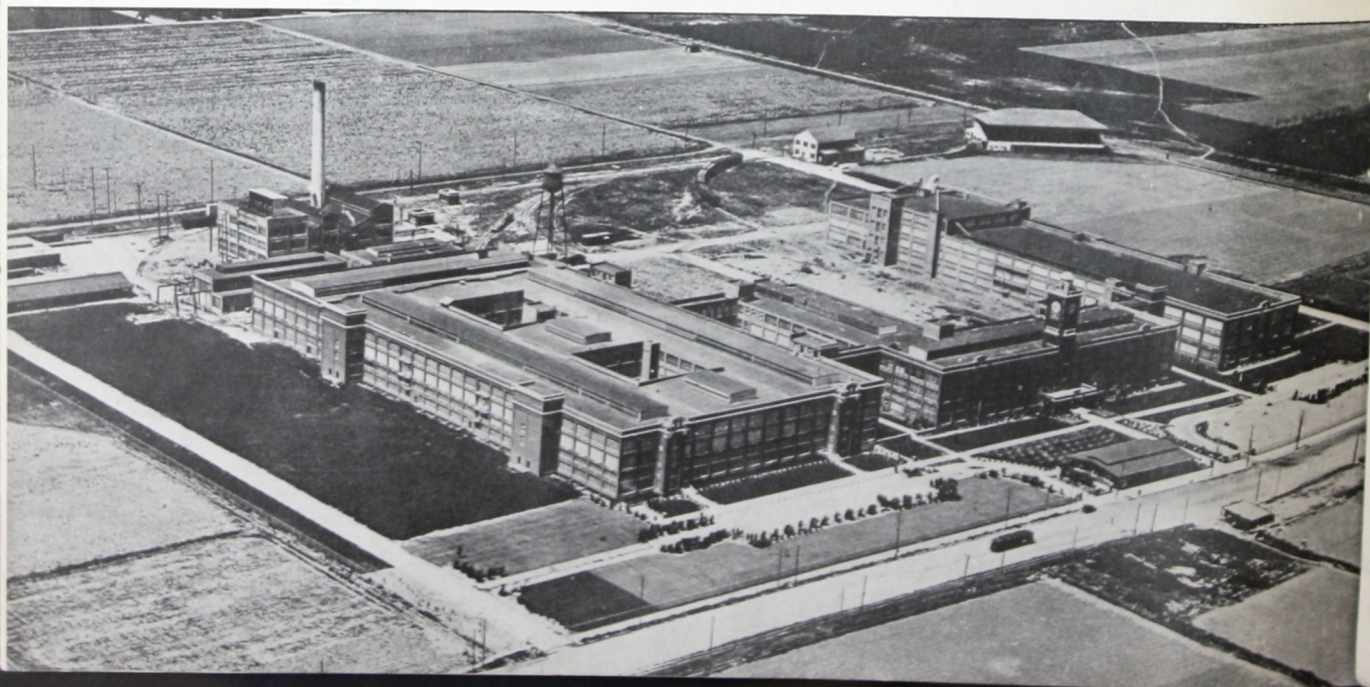
Such roof *permanence*, and freedom from worries and upkeep are yours, when you buy a Johns-Manville Bonded Asbestos Roof. J-M Bonded Roofs are permanently weatherproof and fireproof . . . light in weight . . . and decidedly economical. Furthermore, they are bonded for specified terms when applied by Johns-Manville Approved Roofing Contractors, in accordance with Johns-Manville specifications. And, when *insulated*, they fulfill every function of the ideal roof. (See pages 8-9)

14 YEARS OF TROUBLE-FREE SERVICE and still apparently as good as new. That is the record of the 432,100 square feet of J-M Built-up Asbestos Roofing on the Goodyear Tire and Rubber Company plant, at Los Angeles, California.

J-M Asbestos Roofing Felts, with which J-M Bonded Asbestos Roofs are built up, are made of pure asbestos fibres—the magic mineral that remains unharmed even under the fierce flame of a blow torch. Even when impregnated and coated with asphalt, these felts absolutely will not support combustion.

Because of the peculiar non-capillary nature of asbestos fibres, the layers of felt in the completed roof form a *positive* barrier against evaporation of the waterproofing asphalts both in and between the plies, despite the intense drying-out action of the sun. Because asbestos itself is imperishable, J-M Asbestos Roofing is permanent, and stands up for years without any cost for upkeep.

For use when applying J-M Asbestos Roofing Felts, Johns-Manville recommends its Bonded Roofing Asphalt—a recent development that laboratory tests prove to be far superior to ordinary asphalts, yet is available at an almost negligible increase in cost.



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**WHAT THE WEATHERING TESTS REVEALED!** After water spray, arc light and refrigeration, representing rain, heat and cold, were played on these three samples of roofing asphalts, until the equivalent of 10 years of actual weathering had passed, J-M Bonded Roofing Asphalt (right) was still as good as new.

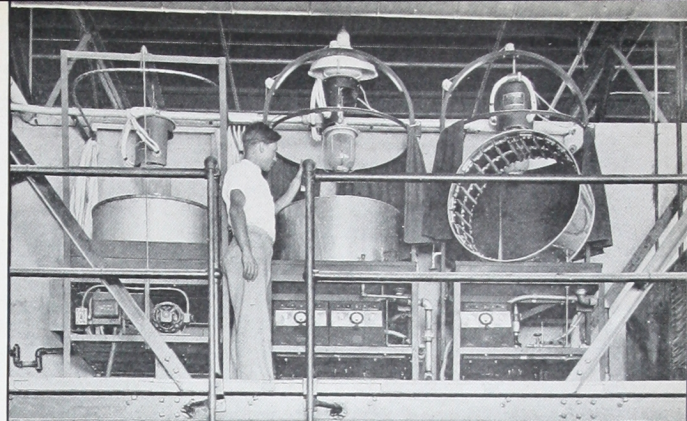
In a series of scientific tests, the Johns-Manville Laboratories placed samples of J-M Bonded Asphalt and ordinary roofing asphalts side by side in their weathering machines. All asphalts looked alike at the start—but when the cycles of heat, rain and freezing cold (equivalent to 10 years of actual service) had passed, there was a striking difference. (See photograph).

Except for the slight normal bleaching, one would not suspect that the J-M Bonded Asphalt is "10 years old in service." This amazing ability to stand up under all conditions is the reason Johns-Manville so strongly recommends it for J-M Bonded Asbestos Roofs.

#### Approved by the Underwriters' Laboratories

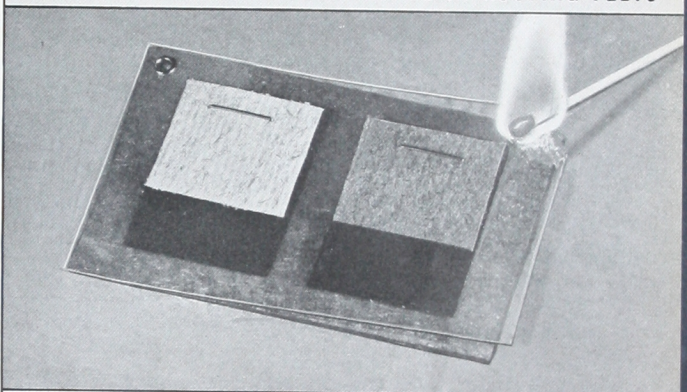
So often a roof's resistance to fire is left unquestioned or overlooked entirely. Yet, no combustible roof can give complete security.

J-M Bonded Asbestos Roofings have been approved by the National Board of Fire Underwriters. After subjecting J-M Roofings to a series of tests, including the radiant heat test, the burning brand test and the flame exposure test, the Underwriters' Laboratories gave a Class A rating to both J-M Super Class A and J-M Class A Built-up Asbestos Roofs. They are fire-resistant to the highest degree.

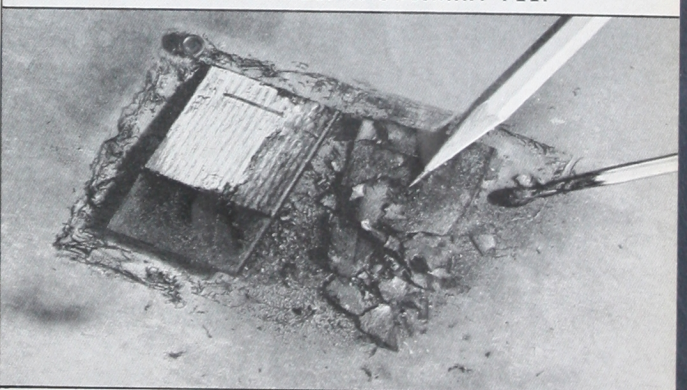


Out at Manville, N. J., in the J-M Laboratories these marvelous weather machines test the weather-resistance of any material or finish. Scientifically designed and operated, they reproduce the effect of years of exposure in a comparatively short time.

#### J-M FIRE TEST REVEALS DIFFERENCE IN ROOFING FELTS



#### J-M ASBESTOS FELT vs ORDINARY FELT



#### J-M ASBESTOS FELT UNHARMED; ORDINARY FELT CONSUMED

Make this amazing test of felts in your own office . . . send for the J-M Roofing Sandwich

Here is a dramatic comparison of roofing felts that you can make right in your own office, with a J-M Roofing Sandwich, which consists of pieces of J-M Asbestos Felts and ordinary felts stapled between sheets of a highly inflammable material. Lay the "sandwich" on a fireproof surface and light it. Instantly it bursts into flame. In a few seconds it goes out—yet in that time the ordinary felt is reduced to ashes, while the J-M Asbestos Felt remains unharmed.





## To protect the most critical areas of the roof—J-M ASBESTILE FLASHINGS

THE weakest spots of a roof are found where the roof deck enters the wall, and at scuttles, skylight curbs and other roof projections. It is here that the largest percentage of roof-leaks occur, due chiefly to the faulty design or application of the flashings.

### A system proved through years of service

To meet the exacting requirements of this most critical part of every roof, Johns-Manville has developed J-M Asbestile Flashing for masonry walls—a system which in actual service has definitely proved itself able to withstand the ravages of weather and, equally important, the strain caused by building sway and the natural movement of the deck.

J-M Asbestile Flashing is bonded in place with J-M Asbestile, a mixture of pure asbestos fibres, high quality asphalt and a hardening

agent. When exposed to air, J-M Asbestile sets hard, and becomes a component part of the wall, unaffected by expansion and contraction.

### A permanently weatherproof installation

Asbestile will not sag. It is non-corrosive, rot-proof and permanent. Used with the imperishable, fireproof J-M Asbestos Base and Cap Felts, J-M Asbestile completes the weatherproofing of your roofs by permanently protecting them at the most critical points.

When J-M Asbestile Flashings are used with J-M Bonded Asbestos Roofing, your built-up roof will be leak-proof and fireproof at every point of the entire roof area. The test of time and J-M's 60 years of practical experience in providing roofs for all types of buildings have definitely proved this. Today, no J-M Built-up Roof will be bonded unless J-M Asbestile Flashings are used exclusively or in certain approved combinations.





## Skilled application, plus J-M Inspection assure a satisfactory finished job

QUALITY materials alone will not make a good roof. Proper application is just as important in producing a permanent, weather-proof roof as are the materials themselves. That is why Johns-Manville has appointed Approved Roofing Contractors, whose selection is based on their experience, thoroughness of workmanship, and financial responsibility, to insure the proper application of every J-M Bonded Asbestos Roof.

In addition, Johns-Manville maintains a corps of Roof Inspectors—men with long experience and training in roof problems and conditions. On every roof to be bonded, an

inspection service is required, and is rendered before, during and after the application of the roof. This service not only insures application in accordance with J-M rigid specifications but provides a Life Extension Service for Roofs. Any unforeseen trouble is immediately detected and remedied before it reaches a serious stage. This service has saved many owners thousands of dollars on old roofs alone.

J-M Roofing Experts will also collaborate with prospective roof purchasers, owners and architects to determine the proper J-M Bonded Asbestos Roof for any building, type of service and roof pitch.

### TYPICAL J-M ROOFS STILL IN GOOD CONDITION AFTER 15 OR MORE YEARS OF SERVICE

ALLIS-CHALMERS CORP., Cincinnati, O.  
ATCHISON, TOPEKA & SANTA FE RAILWAY, Topeka, Kan.  
BOARD OF EDUCATION, School Building, Blair, Kan.  
CALIFORNIA PACKING CO., Santa Rosa, Calif.  
CARNATION MILK CO., Nampa, Idaho  
CARNEGIE STEEL CO., Allston, Mass.  
CENTRAL RAILROAD OF NEW JERSEY, Pier 11, N. R., New York City  
CENTRAL STAMPING CO., Newark, N. J.  
CITY OF RIVERSIDE, Utilities Building, Riverside, Calif.

E. I. DU PONT DE NEMOURS CO., Everett, Mass.  
FAIRBANKS-MORSE CO., Indianapolis, Ind.  
FILLMORE CITRUS FRUIT ASS'N., Fillmore, Calif.  
GENERAL ELECTRIC CO., Lynn, Mass.  
GOETZ BREWING CO., St. Joseph, Mo.  
LEHIGH VALLEY RAILROAD, Pier 8, N. R., New York City  
MORRIS PAPER MILLS, Morris, Ill.  
PACIFIC TELEPHONE & TELEGRAPH CO., El Centro, Calif.  
POLYTECHNIC PREPARATORY SCHOOL, Brooklyn, N. Y.

PROCTER & GAMBLE, Ivorydale, O.  
RAILWAY EXCHANGE BUILDING, St. Louis, Mo.  
RARITAN COPPER CO., Perth Amboy, N. J.  
SANTA BARBARA COUNTRY CLUB, Santa Barbara, Calif.  
SELBY SHOE CO., Portsmouth, O.  
SMOOT LUMBER CO., Provo, Utah  
UNION GAS & ELECTRIC CO., Cincinnati, O.  
VANDERBILT HOTEL, New York City  
S. D. WARREN PAPER CO., Cumberland Mills, Me.  
WORTHINGTON PUMP & MACHINERY CORP., Harrison, N. J.





## Protect your property investment with an INSULATED Roof

*J-M Rigid Roofinsul prevents condensation and roof drip . . . protects the deck against rot and corrosion . . . prevents damage to roofing felts because of deck movement . . . improves working conditions . . . saves fuel*

**T**HROUGH insulation for boilers, furnaces and other heated equipment, Johns-Manville saves American industry as much as \$250,000,000 yearly. Through Home Insulation, it has brought increased comfort and substantial fuel savings to thousands of home owners. And now, with J-M Rigid Roofinsul, it extends the advantages of insulation to its Bonded Asbestos Roofs.

Insulating with J-M Rigid Roofinsul is recognized as a decidedly worthwhile investment, for the following important reasons:

*First*, it effectively retards the passage of heat through the roof, thus *saving on fuel and air conditioning bills*.

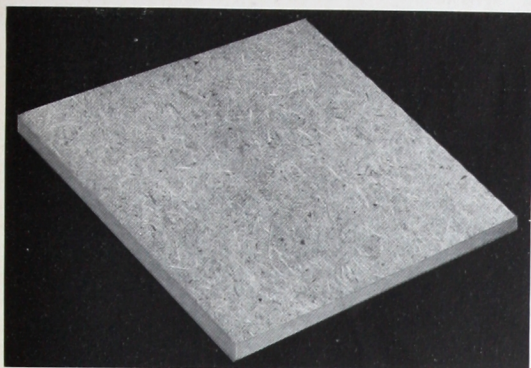
*Second*, on new construction it makes it possible to reduce appreciably the investment in heating and air conditioning equipment.

*Third*, it permits closer control over interior temperatures both in summer and winter, assuring more comfortable, uniform working conditions throughout the year. Uniform interior temperatures are also a vital necessity in the operation of many modern industrial processes.

*Fourth*, it prevents condensation on the under side of the deck and eliminates discoloration of ceilings, and the annoyance and damage caused by roof drip.

*Fifth*, by preventing condensation, it protects the deck against rot and corrosion. When the deck is of concrete or other non-combustible material, J-M Rigid Roofinsul reduces the danger of cracking (commonly caused by sudden temperature changes) and thereby tends to prevent moisture from reaching the reinforcing steel members.





*A sheet of the efficient, strong J-M Roofinsul, which is especially designed for insulating roofs of industrial, commercial and institutional buildings.*

*(Opposite page) Applying J-M Roofinsul to a thickness of three half-inch layers.*

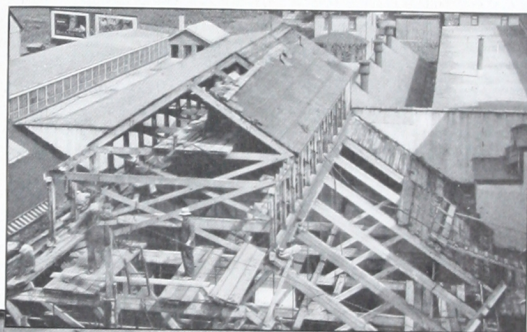
*Sixth*, it provides protection to the roofing felts themselves. All roof decks move to some extent under temperature changes. When this cycle of alternate expansion and contraction continues over a long period of time any cracks in the deck may eventually be transmitted to the built-up roof unless there is an intervening layer of insulation. J-M Rigid Roofinsul not only minimizes movement of the deck by

*Moisture condensation and the resultant decay made the removal of these old wood decks imperative. J-M Rigid Roofinsul would have prevented this expense.*

keeping its temperature more uniform, but also provides sufficient resiliency to take up strains due to any movement which does occur and prevents their transmission to the felts.

J-M Rigid Roofinsul was designed especially for use as insulation over roof decks, principally under J-M Bonded Asbestos Built-up Roofs. It is light in weight and has a high insulating value, and is also rigid and structurally strong. Any desired number of layers of J-M Rigid Roofinsul can be installed to give any needed insulating efficiency, without adding appreciably to the weight of the roof.

In addition to the above advantages, J-M Roofinsul also has a high resistance to moisture absorption. It lasts for years in the open and, when covered with a J-M Bonded Asbestos Roof, lasts as long as the roof itself.





# J-M Bonded Asbestos Roofs can be applied over all types of decks

EXPERIENCE gained through years of roofing manufacture and application has proved conclusively that no one roof can possibly meet all the requirements of every type of deck.

That is why Johns-Manville has developed a number of different types of Bonded Asbestos Roofs for application over various types of roof decks—steel, wood, poured or pre-cast concrete, gypsum or book tile.

One of the most outstanding developments in roof construction *utilizing a steel deck* is the Johns-Manville Insulated Roof over a Fenestra Holorib Steel Deck. Roof insulation, permanent weatherproofing and fireproofing, and a light-weight, strong, durable deck are combined in *one unit structure*.

Here is a roof that provides every quality that goes to make an ideal complete roof structure. The Holorib Steel Deck combines light weight and unusual strength and durability with an appreciable saving in structural



*Application of a J-M Insulated Roof over Fenestra Holorib Steel Deck.*

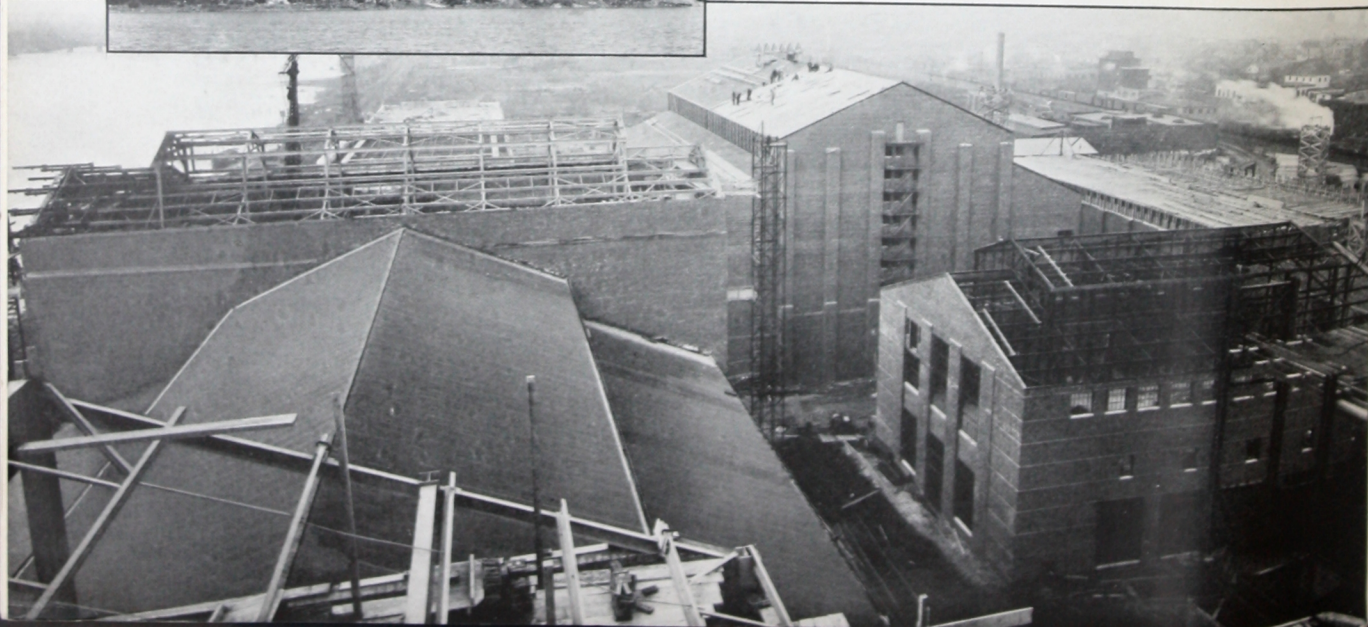
steel requirements. J-M Roofinsul cuts down the initial cost of heating equipment, prevents condensation and roof drip, and results in lower fuel bills and more uniform, comfortable working conditions. A J-M Asbestos Built-up Roof assures lasting protection against weather and the danger of roof-communicated fires.



*One of the most outstanding projects in recent years—the new Hiram Walker Distillery at Peoria, Ill., which utilizes a J-M Insulated Roof over a Holorib Deck, for permanence, protection, and—most important—exact control of temperature and humidity.*

Architects  
Smith, Hinchman & Grylls

General Contractors  
Bryant & Detwiler Co.; Val Jobst & Sons



J-M 20-lb. ASBESTOS FIBER IN 4-PLY CONSTRUCTION

J-M REGAL ROOF COATING

J-M Insulation and

Another one that is the result of the research at Sanacou, ceiling, built-up structure.

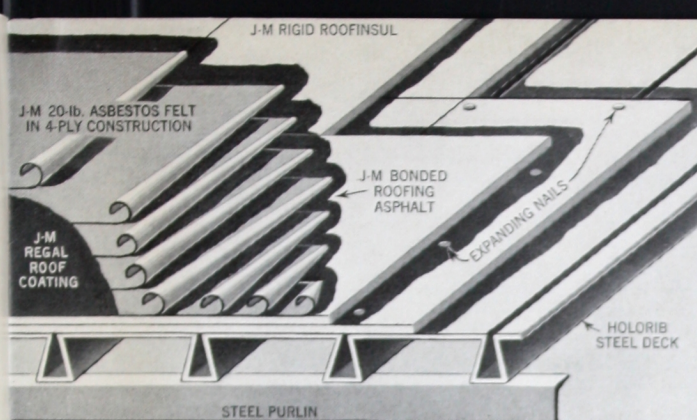
Performance over the reflecting requiring J-M Roofinsul absorbing perforated J-M Rig Built-up

With greatly further practical control tionable

But J-M limited can be a the pitch at least sul is first

Ap In mo Bonded over the roof can inspection perts. B long as tion, you plete secu nicated fi





*J-M Insulated Roof over Holorib Deck—steel deck, insulation and weatherproofing, all in one unit structure.*

Another feature of the J-M Holorib Roof—one that is not found in any other type of roof—is that sound control can be included as part of the roof unit. This construction, known as Sanacoustic Holorib, consists of a metal ceiling, acoustical treatment, insulation and a built-up roof all combined in one unit structure.

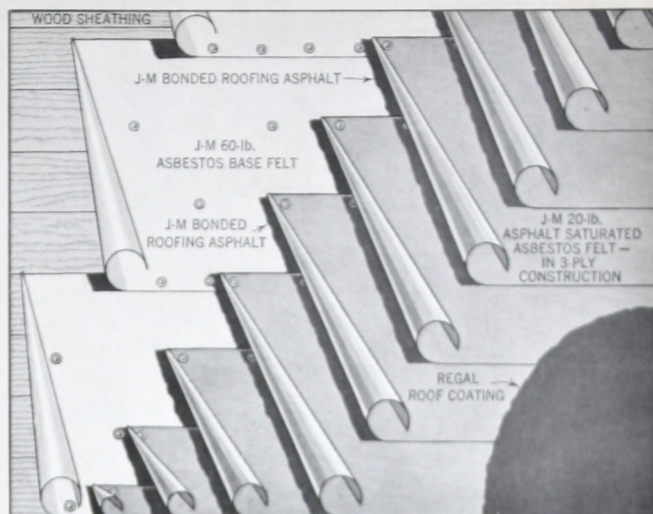
Perforated Holorib steel sheets are first laid over the purlins, thus providing a good light-reflecting surface of pleasing appearance and requiring no maintenance or upkeep. Then J-M Rock Cork, a highly efficient sound-absorbing material, is applied over the perforated sheets between the ribs, followed by J-M Rigid Roofinsul and a J-M Asbestos Built-up Roof.

With this construction, the noise level is greatly reduced and working conditions still further improved. It provides an economical, practical solution to the problem of sound control wherever noise may reach an objectionable volume.

But J-M Bonded Asbestos Roofs are not limited to Fenestra Holorib steel decks. They can be applied over any steel deck provided the pitch is at least  $\frac{1}{2}$ " to the foot and that at least one ply of half-inch thick J-M Roofinsul is first applied to the deck.

#### Applied right over the old roof

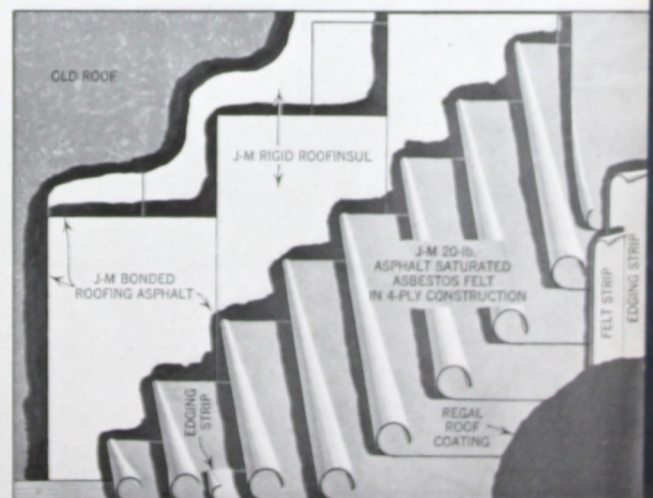
In most cases of re-roofing work, J-M Bonded Asbestos Roofs can be applied right over the old roof. The need of each individual roof can be determined only after a careful inspection by Johns-Manville Roofing Experts. But no matter which is required, as long as the understructure is in good condition, your J-M Asbestos Roof will give complete security from weather and roof-communica-



*J-M Super Class A Asbestos Roof over wood deck.*



*J-M Class A Asbestos Roof over non-combustible deck.*



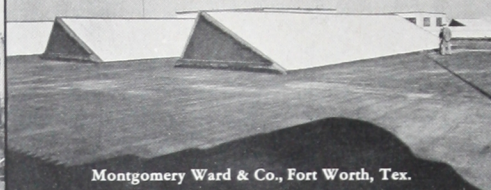
*J-M Asbestos Roof applied over an old roof.*



Chicago Stadium, Chicago, Ill.



TYPICAL INSTALLATIONS OF  
JOHNS-MANVILLE BONDED ASBESTOS ROOFS

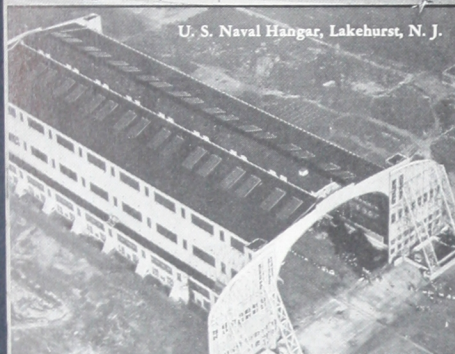


Montgomery Ward & Co., Fort Worth, Tex.

Kansas City Stock Yards, Kansas City, Mo.



U. S. Naval Hangar, Lakehurst, N. J.



## JOHNS-MANVILLE ROOFING SERVICE

A complete service covering every phase in the construction and maintenance of industrial roofs

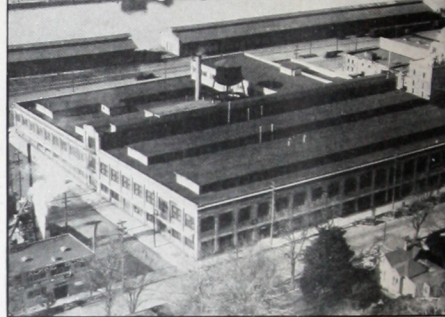
To every purchaser of a Johns-Manville Bonded Asbestos Roof, Johns-Manville offers a free inspection service, for the purpose of detecting any unfavorable condition which may develop after the application of the roof. This same service is also available without charge to those owners of old roofs who wish to keep them in good repair at least expense.

To avail yourself of this opportunity to take advantage of Johns-Manville's 60 years of experience with roofings, it is merely necessary to get in touch with your nearest Johns-Manville office, listed below.

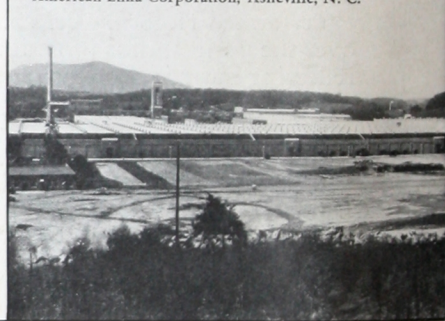
Studebaker Corporation, South Bend, Ind.



California Packing Corp., Sacramento, Cal.



American Enka Corporation, Asheville, N. C.



Port of Oakland, Oakland, Cal.



New York Central Engine Terminal, Selkirk, N. Y.



John A. Roebling Plant, Roebling, N. J.



## JOHNS-MANVILLE

Executive Offices: 22 EAST FORTIETH STREET, NEW YORK

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Johns-Manville International Corporation

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